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ABSTRACT

This paper describes a study which compared the results of treating out-patient middle-income problem drinkers with: (1) a multi-component positive reinforcement procedure emphasizing moderation; or (2) traditional group encounter therapy emphasizing abstinence. Results suggested that behavioral treatment was more effective than traditional therapy on several indicators of outcome, and that the improvement observed was attributable to the active therapeutic techniques employed. (PFS)

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OUTCOME RESEARCH ON BEHAVIORAL AND TRADITIONAL TREATMENT FOR PROBLEM DRINKERS

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Along with the recent development of new and more-effective treatment procedures for problem drinking, more stringent standards for outcome research are also evolving (Pomerleau, 1977; Sobell, 1976). The interaction between these two trends---the clinical and the methodological ---holds much promise for alcoholism treatment research.

Of the various proposals for treating problem drinking, few suggestions have been as revolutionary as controlled drinking---the idea that alcoholics might be able to learn to moderate their drinking as a result of therapy. Interest in controlled drinking began with evidence from outcome studies showing "spontaneous moderation" in former alcoholics (Davies, 1962) and has received considerable impetus from the lack of scientific support for several of the critical assumptions in the theoritical model for mandatory abstinence (Lloyd and Salzberg, 1975; Pomerleau, Pertschuk, and Stinnett, 1976). Moreover, successful tests of controlled drinking have been carried out by several investigators, including Lovibond and Caddy (1970) on out-patient alcoholics using painful dermal shock as a negative reinforcer, Cohen, Liebson, Faillace et al (1971) and Pickens, Bigelow, and Griffiths (1973) on in-patients using positive reinforcers, and Sobell and Sobell (1976) on in-patients using negative reinforcers.

At present there has been little systematic investigation on the use of positive reinforcement techniques in an out-patient setting. In addition, there has been little research on middle income problem drinkers---people who are still employed, have intact families and have not yet encountered serious health problems because of drinking.

These variables represent promising points of departure for treatment research. Positive reinforcement techniques are generally more acceptable to patients than negative ones. Out-patient treatment minimizes disruption of employment and other life patterns and, because residence is not required, therapy can be extended over sufficiently long periods of time to encounter those difficulties in living which contribute to problem drinking. Finally, treating people while they still have something to lose by continued excessive drinking represents an important innovation for it may make possible the prevention of late-stage alcoholism and the personal devestation that often accompanies it.

The present research compared results for out-patient middle-income problem drinkers treated with either a multi-component positive reinforcement procedure emphasizing moderation (Pomerleau and Pertschuk, Note 1) or traditional group encounter therapy emphasizing abstinence. As structured, the study makes possible systemmatic investigation of major indicators of treatment outcome, including drinking level, drinking status, social function, drop out rate, recidivism, and objective validation.

Method

Subjects. Problem drinkers were recruited through physician referrals and announcements of treatment availability in the local media. Criteria for inclusion in the study were expressed willingness to attend treatment and follow-up sessions, capacity to follow instructions, and absence of marked psychopathology, as judged by an interview.

There were 32 subjects treated in the present study. Seven problem drinkers were screened but were referred to another treatment modality

(four for treatment of depression, one for psychosis, and two for open-ended group support for abstinence). An additional seven received a screening interview and were accepted for the study but did not attend the first treatment session or pay a fee. Finally, 24 people made inquiries about the program but did not come for a screening interview.

On a random basis, 18 subjects were assigned to behavioral treatment and 14 were assigned to traditional treatment. The procedure assigned problem drinkers to one or the other treatment group until six or seven participants were recruited rather than trying to accumulate sufficient subjects to form two groups at one time. This approach was developed to minimize the delay between screening and treatment, as previous experience had shown that attrition increased with the waiting interval.

Procedure. Treatment was conducted at the Center for Behavioral Medicine of the Department of Psychiatry of the University of Pennsylvania, a unit specializing in developing and testing methods for preventing disease through behavior change (Pomerleau, Bass, and Crown, 1975). Therapy was conducted with groups of three to seven problem drinkers in ninety minute sessions meeting once a week for three months and in five additional sessions at increasing intervals over nine months following treatment. The behavioral and traditional treatment procedures have been described at some length in a recent article by Pomerleau, Pertschuk, Adkins, et al, 1978).

In brief, the behavioral procedure consisted of four overlapping phases: (1) baseline---including the screening interview and first

therapy session, (2) reduction of drinking or cravings---the second through the fifth session, (3) behavior therapy for problems contributing to excessive drinking---the sixth through the ninth session, and (4) maintenance of therapeutic gain---the tenth through twelfth session and five follow-up sessions.

In the baseline phase, the problem drinker was interviewed, completed forms on drinking history and social function, and provided demographic information. A prepaid treatment fee was required (on a sliding scale from $85 to $500, based on ability to pay). A "commitment fee" (Chapman, Smith, and Layden, 1971; Hagen, Foreyt, and Durham, 1976) of up to $300 was also requested. The latter fee could be earned back in its entirety by following the treatment instructions indicated in Table 1, i.e., by (a) keeping records (refunds based on completeness not content), (b) coming to treatment with no detectable breath alcohol, (c) carrying out selected non-drinking activities as corroborated by a self-designated monitor, and (d) attending follow-up. Participants were told which activities were required but not when refunds would be

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Insert Table 1 about here

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given. If the participant dropped out of therapy, all fees were forfeited. As can be seen in Table 2, participants indicated time, situation, desire, and amount of alcohol on a drink-by-drink basis in the daily records. (Note that alcohol refers to 100% ethanol and that 1 oz.

Insert Table 2 about here

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equals 29.573 cc.). Breath alcohol was measured before each session (using the Alcohol Level Evaluation Road Tester; Borg-Warner, DesPlaines, Illinois); readings were trichotomized into "pass" (0 to .02% ethanol by weight per 100 ml. of blood), "warn" (.01 to .05 %), or "fail" (greater than .05%). (Note that .10% or greater defines intoxication for legal purposes in Pennsylvania.) Participants who failed were asked to leave and to return sober the next session. Monitors for non-drinking activities were called periodically on a pre-arranged but un-announced schedule.

Following a week of baseline recording of alcohol consumed (or craving for drink), active treatment began. Techniques consisted of shaping, stimulus control, and contingency management. For participants with no medical contra-indications for controlled drinking, the final goal was three days of abstinence per week, consumption of no more than three ounces (88.7 cc.) of absolute alcohol on days when drinking was allowed, and consumption of no more than ten ounces (296 cc.) of alcohol per week (the "3-3-10" rule). Participants attempting abstinence used similar methods but set sub-goals more stringently so that abstinence could be reached within two weeks; subsequently, they recorded cravings on their daily records. Quotas were publicly stated and social reinforcement for success was given by therapists as well as participants. Behavior therapy was provided to identify and modify emotional situations which might precipitate or contribute to excessive drinking. Toward the end of therapy, participants were prepared for decreased structure in the follow-up phase. Personal responsibility for the

consequences of maladaptive drinking was stressed.

Traditionally oriented treatment was conducted in small groups over the same period of time as behavioral treatment, providing similar favorable expectations and therapist attention in addition to support for non-drinking. Fees for treatment were on a sliding scale (from $5 to $30 per session for 17 sessions, based on ability to pay; payment was due before each session). No prepaid commitment fees were required nor were refunds awarded. There was no monetary penalty for dropping out. Before each session, a questionnaire detailing the amount of alcohol consumed in the previous week was filled out.

Therapy consisted of three phases: introduction, comprising three sessions; confrontation, lasting six or seven sessions; and resolution, taking up the final two to three sessions. Five follow-up sessions were also scheduled providing support for non-drinking patterns.

In the introductory phase the importance of abstinence was emphasized. Controlled drinking was allowed as a goal only in the case in which it was the sole basis for staying in treatment and was not medically contra-indicated. Participants were provided with opportunities to develop a sense of group cohesion and mutual trust. During this time, the therapists observed various denial patterns in participants. In the confrontation phase, the therapists taught participants to recognize even subtle denial patterns in others and to confront them effectively. Participants took a turn on the "hot seat" (Fehr, 1976) for 20 to 30 minutes, during which time they were the focus of observation, comment, and analysis of all other group members and the therapists. In the

resolution phase, attempts were made to channel the intense emotions generated in the preceeding phase into productive, future-directed activity. During this phase, adjunctive therapy was available for depression, anxiety, family problems and other personal difficulties which might exacerbate drinking problems. Five follow-up sessions were also scheduled, giving support for non-drinking patterns.

Measures. Daily records of drinking and pre-session breath alcohol tests were provided for behavioral participants. A pre-session retrospective questionnaire on drinking over the previous week (shown in Table 3) was given to all traditional participants. (A retrospective

Insert Table 3 about here

questionnaire was used in traditional treatment because record keeping ---stimulus control analysis---is a behavioral technique)

In both treatments, participants provided 10 ml. blood samples to determine gamma glutamyl transpeptidace levels (Rosalki and Rau, 1972), as a measure of liver enzyme function before and after treatment. Social function was also assessed before and after treatment using a modified version of the "Social Adjustment Scale" (Weissman, Paykel, Siegel et al, 1971).

Insert Table 4 about here

Therapists. A doctoral level therapist was responsible for all phases of treatment while a subdoctoral co-therapist assisted during treatment and was the principal therapist during follow-up. In behaviora

treatment, one of two doctoral-level therapists, a licensed psychologist or board-eligible psychiatrist, led treatment in successive groups; they both had several years of general clinical experience. The behavioral co-therapist held a masters degree in psychiatric nursing. Traditional treatment was led by a board-certified psychiatrist who had specialized in the treatment of alcoholism for several years. The traditional co-therapist held a masters degree in psychiatric social work. Traditional therapists were not familiar with the behavioral procedures.

Results

Pre-treatment characteristics for the treated population as a whole and for behavioral and traditional groups separately are compared in Table 5. There were no statistically significant differences between behavioral and traditional participants in any pre-treatment category.

Insert Table 5 about here

While behavioral participants showed a non-significant 18% reduction in drinking between the week before screening and the baseline week (the first week in therapy), traditional participants showed a significant 46% reduction between screening and baseline (Wilcoxon Test, $p < .01$; two tailed).

Drinking level as a funtion of time for the behavioral and traditional participants who remained in treatment is shown in Figure 1.

Insert Figure 1 about here

Statistical comparisons excluding dropouts, indicate that remaining

traditional subjects consumed significantly more than behavioral subjects at the time of screening (Mann-Whitney U-test, $p < .05$; two-tailed); there were no significantl differences in consumption between the two procedures in baseline, subsequent treatment, or in follow-up. Drinking level decreased significantly from screening to the first anniversary follow-up in within-subject comparisons for both treatment procedures but the reductions occurred at different times in the two groups. For the participants who remained in behavioral treatment, consumption levels during the screening and baseline week were not significantly different but the drinking level at the last week of treatment and the first anniversary follow-up was significantly lower than baseline (in both cases, Wilcoxon Test, $p < .005$; one-tailed) In contrast, those participants staying in traditional treatment, consumed significantly less during baseline (Wilcoxon Test, $p < .05$; two-tailed) than prior to screening, and the drinking levels at the last week of treatment and at the first anniversary follow-up were not significantly different than at baseline.

The one year follow-up status for all behavioral and traditional participants is compared in Figure 2. Somewhat fewer behavioral participants

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Insert Figure 2 about here

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abstained but considerably more reduced their drinking ($\chi^2 = 2.93, < .1$) and slightly fewer behavioral participants dropped out of treatment compared with traditional participants (Fisher Exact Test, $p < .05$).

Combining those participants who abstained or reduced to form an improved category shows that 72% of behavioral participants improved, in contrast to 50% of traditional participants (not significant). With respect to recidivism, of the participants who were improved at the end of therapy, only one (in the behavioral group) resumed drinking at his original pretreatment level at the one year follow-up. The above analysis accounts for <u>all</u> problem drinkers who entered treatment.

With regard to social function, the data are incomplete because the procedure sampled only the traditional groups and the last behavioral group. Of 13 traditional participants sampled, 8 indicated improved function at the end of treatment on the modified "Social Adjustment Scale", 3 indicated no change, and 3 reported deterioration. Of the 8 traditional participants who remained in treatment, 6 were improved, 1 was the same, and 1 had deteriorated (Wilcoxin Test, $p < .05$; two-tailed).

Among the indicators of treatment compliance were the following. With respect to attendance in treatment, behavioral participants came to a median of 92% of scheduled sessions, compared with 87% for traditional participants (not significant); in follow-up, attendance increased to 100% for behavioral participants and decreased to 80% for traditional participants (not counting dropouts; Mann-Whitney U-test = 47, $p < .1$; one-tailed). In behavioral treatment, a median of 97% of required daily records were submitted, a median of 100% of breath-alcohol tests given were passed (only three participants had detectable breath alcohol at various points during treatment), and a median of 89% of scheduled

non-drinking (alternative) activities were completed, as corroborated by a monitor.

The following indicators were predictors of outcome for behavioral and traditional participants combined. Duration of problems with drinking was not significantly correlated with drinking level prior to treatment but was negatively correlated with drinking level at the end of treatment (Spearman $r = -.394$, $p < .03$, $N = 24$). Duration of problem was also a predictor of dropping out: dropouts had a mean duration of 5.3 years ($n = 8$) compared with 12.5 years ($N = 24$) for non-dropouts ($t = 2.05$, $p < .05$; two-tailed). In behavioral treatment the number of estimated records did not correlate significantly with drinking level at the end of treatment but was a predictor of level at the one year follow-up (Kendall $r = +.400$, $p < .03$, $N = 15$). The amount of alcohol consumed prior to screening was not a significant predictor of subsequent drinking levels, but the drinking level at baseline was significantly correlated with the level at the end of treatment (Spearman $r = +.49$, $p < .008$, $N = 24$) and at the one year follow-up (Spearman $r = +.400$, $p < .03$, $N = 23$).

There was a significant correlation between gamma glutamyl transpeptidase tests administered on 20 of the 32 participants and self reported drinking levels (Spearman $r = +.453$, $p < .05$)---the greater the consumption, the higher the enzyme activity. Seven participants had abnormally-elevated gamma glutamyl transpeptadase activity prior to treatment and reported a substantial decrease in consumption between screening and the end of treatment; of these, six showed a corresponding

decrease in enzyme activity at the end of therapy (Wilcoxin Test, $p < .025$; one-tailed).

Discussion

There were no significant differences in pre-treatment characteristics between participants assigned to the two procedures. Traditional participants cut down their drinking by nearly half, however, between screening and baseline---a significant reduction. Apparently, this was a response to the emphasis on abstinence in traditional therapy (during the screening period), for behavioral participants did not display a significant reduction over this interval.

Traditional participants who remained in treatment reported significantly more drinking at screening than behavioral participants, but there were no significant differences between treatments at any other point subsequently. Additional significant changes occurred within treatment, with traditional subjects reporting a significant reduction between screening and baseline, while behavioral participants showed a significant reduction between baseline and the end of treatment and follow-up. The statistical analysis is not entirely consistent with the graphic presentation in Figure 1 because the traditional procedure had a larger number of dropouts, thereby reducing the sample size below the significance level.

The crucial role of the differential dropout rate is further emphasized when the data are organized into outcome categories. As shown in Figure 2, 72% of behavioral participants were improved at the year anniversary point with 11% dropping out, compared with 50% of

traditional participants improved with 43% dropping out. While the monetary penalty in the behavioral procedure may have helped minimize the dropout rate, it does not provide a complete explanation of what happened. The median interval in treatment for behavioral dropouts was 5.5 weeks (1 week and 10 weeks), compared with a median of 9.0 weeks (1,8,9,9,9, and 11 weeks) for traditional treatment. Fees were prepaid in the behavioral procedure and the monetary penalty reduced by only a third during the treatment phase; thus a median of about six weeks in treatment seems an adequate estimate of central tendency. The point at which most traditional participants dropped out, however, is nine weeks, coinciding exactly with the culmination of intense interpersonal confrontations in therapy.

In traditional treatment, it would seem, the therapeutic process had mixed effects, helping those who were receptive but driving out those who were not. In addition, the traditional approach apparently made more immediate demands of its participants, as evidenced by the significant reduction in drinking prior to active treatment. In conclusion, even for those participants who were helped by traditional therapy, a considerable proportion of the overall benefit seems to have been based on compliance with initial therapist demands rather than the therapeutic process of group confrontation, per se. The favorable effects of behavioral treatment occurred during therapy and are consistent with findings in the contingency management literature (Mahoney and Thoresen, 1974).

Several considerations should be taken into account before comparing the present study with other investigations. There has been little published data on middle-income drinkers (who presumably have a more favorable prognosis than lower-income clients). Also research on maximized traditional therapy has been lacking. With these provisos in mind, some cautious comparisons can be made with the study by the Sobells (Sobell and Sobell, 1976) on controlled drinking. A point of similarity is that, in addition to comparing behavioral and conventional hospital treatment, subjects volunteered for the study and had a reasonably favorable prognosis (Sobell, Note 2); a difference is that treatment was conducted on an in-patient setting and that conventional state hospital therapy was probably less intensive than traditional therapy in the present study. The Sobells' findings, on the whole, are consistent with the present ones---in particular, the observation that behavioral treatment with moderation as a goal produced greater improvement in a larger number of subjects than traditional abstinence-oriented treatment. Recent reviews of the behavioral treatment literature (Miller and Barlow, 1973; Nathan and Briddell, 1977) support these conclusions.

Measures of social function were instituted only in the latter part of the experiment. Because of the small number of behavioral participants sampled, it is not possible to make comparisons between behavioral and traditional participants. The traditional participants studied however, did indicate a general improvement in social function, especially those participants who remained in therapy.

The results for compliance document the cooperation with treatment exhibited by both behavioral and traditional participants (discounting participants who dropped out), which is consistent with what one would expect for out-patient volunteers. Behavioral participants had better attendance in both treatment and follow-up than traditional ones. Though conditions were consistent in treatment and follow-up for traditional participants, behavioral participants received additional rewards in the form of monetary refunds for attending follow-up, which may account for the fact that attendance in follow-up increased in behavioral treatment while attendance declined in traditional treatment. These trends are even more pronounced when participants who dropped out are taken into account.

Of the several variables examined, only a few were predictive of outcome. Although a predictor, duration of problem drinking was paradoxical in that longer problem durations were associated with greater improvement---less alcohol was consumed at the end of treatment and the participant was more likely to stay in therapy. This finding is in contrast to results for smokers which indicate that people who have smoked for a longer time are less likely to succeed in treatment (Pomerleau, Adkins, and Pertschuk, 1978). However, consistent with the findings for smokers, a greater number of estimated drinking records in behavioral treatment was a strong predictor of non-improvement; while this indicator was specific to behavioral treatment, other variables might also serve as measures of treatment compliance.

Finally, greater quantities of alcohol consumed prior to therapy were associated with a less favorable outcome, a finding consistent with previous surveys of alcoholics in treatment (Armor, Polich, and Stambul, 1976) as well as on smokers (using number of cigarettes smoked as a measure of quantity). While the present correlations are based on small samples and should be interpreted with caution, the establishment of indicators of outcome---especially those which are objective and easy to obtain---may provide a valuable tool for anticipating problems in therapy as well as for identifying subjects who need intensive treatment.

Finding a significant positive correlation between alcohol consumption and liver enzyme activity is encouraging for it suggests that self-reported drinking in the present study reflected actual alcohol intake (Rosalki and Rau, 1972). The demonstration that abnormal elevations of transpeptidase activity prior to treatment subsided when excessive drinking decreased during therapy, provides further support for the contribution of ethanol rather than some other toxic substance in producing the observed changes in enzyme activity.

The Sobells (Sobell and Sobell, 1975) have studied the accuracy of self reports by correlating jail or hospital incarceration or legal action resulting from excessive drinking, using official records and documents; they concluded that for their population---alcoholic outpatients who had elected treatment---self-reported information was valid. Other investigators (Robins, 1966; Summers, 1970) have been less sanguine however, especially in situations where considerable social deviance is

involved and where the patient is ambivalent about or distrustful of treatment. While useful as a measure of treatment impact documenting the consequences of excessive drinking does not entirely solve the problem of validation of self-reported consumption.

Though only in the research stage at present, there are objective indicators of alcohol consumption which may be even more sensitive and discriminating than gamma transpeptidase activity, in particular plasma alpha-aminobutyric-acid-to-leucine ratios (Shaw, Stimmel, and Lieber, 1976). Whatever indicators used, objective validation of alcohol consumption is of considerable import for on-going program evaluation and the potential scientific contributions of the technology are also great. Consider, for instance, experiments in which the effects of positive and negative reinforcement in therapy are investigated or in which the impact of group confrontation of denial is contrasted with group support for non-drinking. The examples chosen present special difficulties in measurement, as the treatment variables can affect the veracity of self-reported data, thus confounding the results. The use of objective, quantifiable dependent variables can overcome these problems.

A few comments on subject accountability are also in order. As mentioned above, the present report gives the status for all problem drinkers who interacted with the program. The importance of this point needs to be stressed, for all too many studies give data on only those subjects who completed treatment, leaving out information about problem drinkers who dropped out or who refused treatment. Without such information, valid conclusions concerning program effectiveness are limited and

may, in many cases, be impossible. As Sobell (1976) has noted, dropping out from treatment is usually associated with lack of improvement; research on weight control programs (Hagen, Foreyt, and Durham, 1976) as well as clinical findings for smoking and problem drinking treatment at the Center for Behavioral Medicine are consistent with this observation. Thus, the lower dropout rate for behavioral treatment in the present experiment is as much an indicator of clinical effectiveness as the larger proportion of participants in the improved category.

Number of participants accepted who did not enter treatment, provides another measure of program impact; that category was quite small in the present study (7 potential participants) compared with the number who were actually screened and began therapy (32). Finally, the general attractiveness of a procedure can be guaged by the number of problem drinkers who made inquiries about treatment but had no further contact with the program; 24 such inquiries were generated but it is not possible to assess whether this constitutes a favorable or unfavorable ratio, because no comparable data has been reported in the literature. Clearly, if inroads are to be made on the problem of attracting larger numbers of problem drinkers into therapy---preferably at an earlier stage in the disorder---information of this kind cannot continue to be omitted.

Summary and Conclusion. The present experiment suggests that behavioral treatment was more effective than traditional therapy on several indicators of outcome and that the improvement observed was attributable

to the active therapeutic techniques employed. The research design utilized a number of measures and procedures to assess treatment, consistent with recent recommendations for improving standards for outcome evaluation. Among the variables used were self-reported social function, daily consumption of alcohol, predictors of outcome, measures of compliance, validation of improvement through objective measurement and independent corroboration as well as extended follow-up evaluation to determine the stability of the changes observed. We hope that other alcoholism treatment researchers will find the present results sufficiently compelling to warrant replication and the methodology suitably robust to justify further extension and refinement.

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Table 1

REFUND SCHEDULE

Session	Record Keeping	No Alcohol on breath	Alternative Behaviors	Attends Follow-up	Session Total
1					
2	$10	$5			$15
3	$10	$5	$10		$25
4	$10				$10
5			$10		$10
6	$10				$10
7		$5	$10		$15
8			$10		$10
9	$10				$10
10		$5			$5
11			$10		$10
12		$5	$10		$15
1		$10	$5	$10	$25
2		$10	$5	$10	$25
3		$10	$5	$20	$35
4		$10	$5	$20	$35
5		$10	$5	$30	$45
Category Total	$50	$75	$85	$90	$300

CENTER FOR BEHAVIORAL MEDICINE
UNIVERSITY of PENNSYLVANIA
DAILY ALCOHOL RECORD

Name .....
Date .....

Time	SITUATION Place	With Whom	Mood	Craving * (0-10)	Kind of Drink e.g., vodka & orange juice	Ounces of Liquor	Percent Alcohol in Liquor	Ounces o Alcohol

INSTRUCTIONS

1. For each drink note time, situation, and kind of drink.

2. Note the ounces of *liquor* consumed, e.g., in a mixed dink of vodka and orange juice, note the ounces of vodka only.

3. Note the % alcohol in the *liquor*. If alcohol content is listed as "proof" use the following conversion

$$\% \text{ alcohol} = \frac{\text{Proof}}{2}$$

If % alcohol is not given or you forgot to note it, use table at bottom to estimate alcohol %.

4. Compute ounces of alcohol

Example: 12 oz. beer
12 oz. x .04 = .48 oz. alcohol

Example: Scotch and water (1.5 oz. Scotch)
1.5 oz. 86 proof Scotch

$$1.5 \text{ oz.} \times \frac{.86}{2} = \frac{1.29}{2} = .645 \text{ ounces of alcohol}$$

LIQUOR	% ALCOHOL
Regular Beer	4
Ale	5
Malt Beverage	7
Regular Wine or Champagne	12
Port or Muscatel	18
Fruit Brandies	25
B & B, Drambuie, liqueurs	40
Distilled Spirits: ..... Brandy, Rum, Scotch, Vodka, Whiskey, Gin, Bourbon, etc.	45

USE SPACE PROVIDED BELOW FOR COMPUTATIONS

Table 2

Center for Behavioral Medicine
University of Pennsylvania

Participant _____
Monitor _____
Date _____
Subject No. _____

Drinking Program
Drinking Pattern Questionnaire
(short form)

1. a) In the past week, on how many days did you have a drink? _____ days.

   b) How many days did you drink wine? _____ days. On a day when you had wine, how much wine did you drink? (1 glass = 3 oz; 1 bottle = 26 oz) _____ oz.

   c) How many days did you drink beer? _____ days. On a day when you had beer, how much beer did you drink? (1 glass = 8 oz; 1 mug = 12 oz; 1 quart = 32 oz) _____ oz.

   d) How many days per week did you drink liquor? _____ days. On a day when you had liquor, how many drinks did you consume? _____ drinks. What kind of liquor was in the drink (eg. vodka, scotch, etc.)? _____. How many ounces of liquor per drink? _____ oz.

2. a) In the past week, how many days did you experience problems (legal, family, social, work, medical, etc.) as a result of drinking? _____ days.

   b) What level of drinking leads to problems: Number of drinks _____; Kind of liquor _____; Ounces of liquor per drink _____.

3. If you encountered problems with drinking:

   a) Please indicate the places, situations, and feelings which may have led to the difficulty:

      1. Place(s) a. _____
         b. _____
         c. _____

      2. Situation(s) a. _____
         b. _____
         c. _____

      3. Feeling(s) a. _____
         b. _____
         c. _____

      4. Other (Please specify) _____
         _____

   b) Please specify what kind of problems you encountered: _____
      _____

Table 4

Participant: _____
Monitor: _____
Date: _____
Subject # _____

SOCIAL-ADJUSTMENT SCALE (short form)

PLEASE CIRCLE THE APPROPRIATE NUMBER TO INDICATE HOW WELL THINGS HAVE BEEN GOING FOR YOU IN THE LAST WEEK:

1. At your work (job and/or housework)
   1. very well
   2. well
   3. fair
   4. poorly
   5. very poorly

2. In your social life
   1. very well
   2. well
   3. fair
   4. poorly
   5. very poorly

3. With your close friends
   1. very well
   2. well
   3. fair
   4. poorly
   5. very poorly

4. With your spouse/boyfriend/girlfriend
   1. very well
   2. well
   3. fair
   4. poorly
   5. very poorly
   6. does not apply (no regular contact)

5. With your children
   1. very well
   2. well
   3. fair
   4. poorly
   5. very poorly
   6. does not apply (no regular contact)

6. With your parents
   1. very well
   2. well
   3. fair
   4. poorly
   5. very poorly
   6. does not apply (no regular contact)

7. How much time have you lost from your work (job and/or housework and/or school in the last [redacted] weeks?

   _____Days

Table 5

Pre-treatment characteristics (Medians)

	All Subjects	Behavioral Participants	Traditi Particip
Age (years)	44	45	41.5
Education (years)	16	16	15.5
Duration of problems with alcohol (years)	8.5	9.5	7.8
Number of prior treatment attempts	2	2.5	1
Delay between screening and treatment (weeks)	3	3	3
Percent Male	69	56	86
Amount of alcohol (100% ethanol) consumed week prior to screening			
(oz.)	28.5	25.5	31.4
(cc.)	843	754	928
Amount of alcohol consumed in baseline			
(oz.)	19.8	21.0	16.8
(cc.)	586	621	497
Number of participants	32	18	14

Figure 1. Median cc of ethanol per week at various points in time for the 16 and 8 traditional participants who remained in treatment. Dropping out was defined as missing at least the last session of treatment and not attending follow-up subsequently.

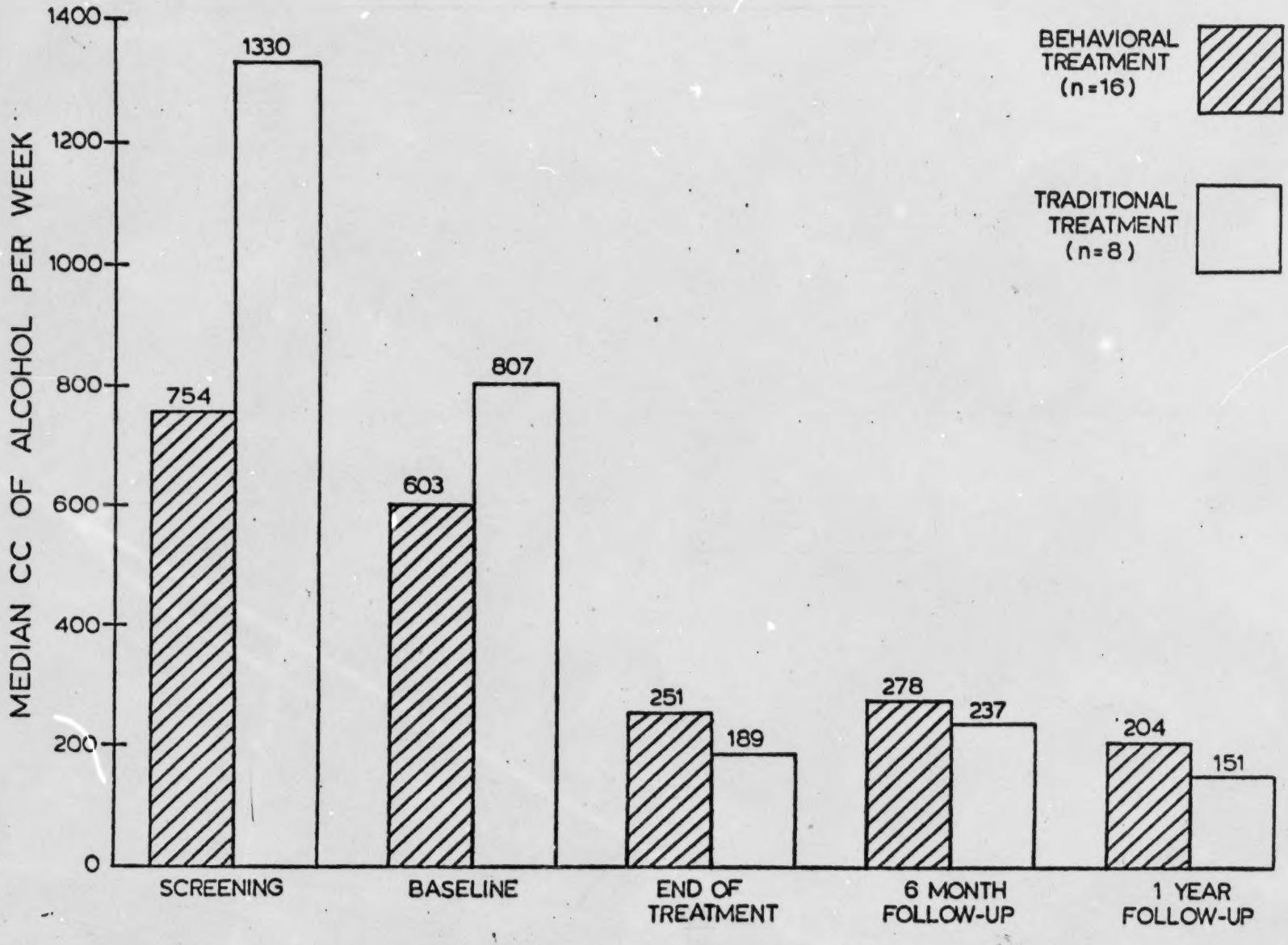
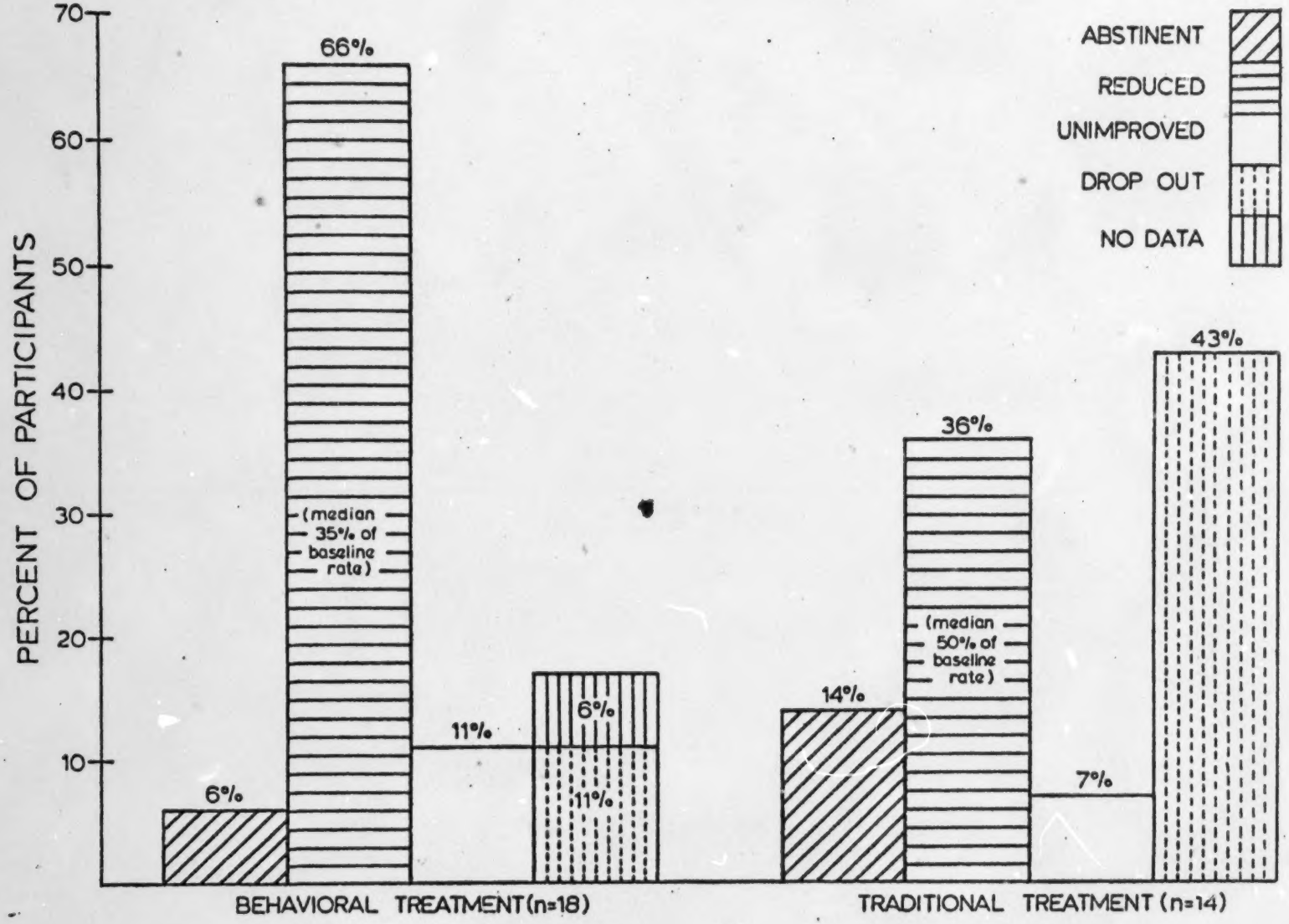

MEDIAN CC OF ALCOHOL PER WEEK
1400
1200
1000
800
600
400
200
0
1330
754
807
603
251
189
278
237
204
151
SCREENING
BASELINE
END OF TREATMENT
6 MONTH FOLLOW-UP
1 YEAR FOLLOW-UP
BEHAVIORAL TREATMENT (n=16)
TRADITIONAL TREATMENT (n=8)

Figure 2. Percent in various outcome categories for 18 behavioral and 14 traditional participants at the one year follow-up. A participant was classified as unimproved if drinking at the same level or greater than baseline levels. One behavioral participant, for whom no data could be obtained at the anniversary follow-up, was classified in the (no data) dropout category---though abstinent at the nine month follow-up, no assumptions were made concerning drinking status.


ABSTINENT
REDUCED
UNIMPROVED
DROP OUT
NO DATA
PERCENT OF PARTICIPANTS
70
60
50
40
30
20
10
66%
(median 35% of baseline rate)
6%
11%
6%
11%
14%
36%
(median 50% of baseline rate)
7%
43%
BEHAVIORAL TREATMENT (n=18)
TRADITIONAL TREATMENT (n=14)